REMARKS

Reconsideration and further examination are requested.

This paper is based on the claims as they read before the final rejection dated 06-09-2008. The First Amendment After Final, filed 08-05-2008, was technically not entered, but would have been entered if an appeal brief were filed. *See* Form PTOL-303, item 7 dated 08-13-2008.

A. Disposition of the Claims

Claims 1-2, 4-23, & 25-32 are pending in the application.

Claims 2, 5, 7-10, 21-23, 25-26, & 28-30 are withdrawn from consideration.

No claim is allowed.

Claims 1, 4, 6, 11-20, 27, & 31-32 are rejected.

Claims 1 & 15 are currently amended, without prejudice or disclaimer. Support for each amended claim is found in the as-filed specification and is believed obvious from the record. In claim 1, the amendment, ~~*comprises metal carboxylate*~~ *is selected from the group consisting of metal acetates, metal carboxylates, metal nitrates, metal sulfates, and metal hydroxides*, returns the language to its form. Also in claim 1, the amendment adds language from specification as shown in the brackets below:

--*wherein the powder manufactured comprises nano-dispersed nanopowders* **[not nanoparticles as in claim 24, see spec., para. 31]** *comprising carrier particles of at least one first composition and attached particles of at least one second composition that are dispersed on and attached to the surface of the carrier particles* **[see spec., para. 35, items (1)-(2)]**, *wherein the attached particles differ from the carrier particles,* **[see spec., para. 35, item (2)]** *wherein the ratio of the average size of the carrier particles to the average size of the attached particles is greater than or equal to 2.* **[see spec., para. 35, item (6)]** --.

Claim 24 is currently canceled, without prejudice or disclaimer. Claim 3 was previously canceled, without prejudice or disclaimer.

B. 35 U.S.C. § 112, first paragraph-Written Description

Claim 15 is rejected as failing to comply with the written description requirement. Office action, para. 2. In the rejection after final, the Examiner asked each Applicant to identify support for, as recited in claim 15, *a temperature greater than 600°C.* In the first response after final, each Applicant directed the Examiner to the present specification, paragraph 60, which incorporates by reference U.S. Pat. No. 5,984,997 and reads, in part, as follows:

> Methods and equipment such as those taught in US Patent Nos. 5,788,738, 5,851,507, and 5,984,997 (each of which is specifically incorporated herein by reference) can be employed in practicing the methods of this invention.

The '997 patent, in turn, states that combustion temperatures will be greater than 600°C:

> Usually, combustion temperatures will be in excess of 600°C., a temperature at which diffusion kinetics will be sufficiently fast that a compositionally uniform powder will be produced.

'997 patent, col. 5. In the Advisory action, the Examiner disagreed that such language supports the present version of claim 15, because the specification "does not specify that [the] full disclosure" of the '997 patent had been incorporated.

In response, the present version of claim 15 has been amended to depend from claim 14, which recites *the reacted metal-containing precursor is product of combustion.* Claim 15 has been further amended to provide an antecedent (underlined) reading *combustion processing is performed at a temperature greater than 600°C.*

The incorporated subject matter must include the "[m]ethods and equipment" of the '997 patent, because the incorporating passage explicitly states that those "[m]ethods and equipment [of the '997 patent] ... can be employed in practicing the methods of the invention." (Spec. para. 62). Furthermore, the '997 patent states that usually the combustion temperatures are greater than 600°C, much like the language in the present version of claim 15, which reads *combustion processing is performed at a temperature greater than 600°C.*

Since incorporated information is as much a part of the application as-filed as if the text were repeated in the application, incorporated information should be treated as part of the text of the application as filed. M.P.E.P. § 2163.07. Thus, the present rejection should be withdrawn.

C. 35 U.S.C. § 112, first paragraph-Enablement

There are two such rejections. Each is addressed under a separate header.

1. Enablement of Scope (postulated inoperable embodiments)

Claim 15 is rejected as failing to comply with the enablement of scope requirement. Office action, para. 3. In short, the Examiner believes that postulated inoperable embodiments would exist if one of ordinary skill in the art were to *process[] the stream* at any temperature above 600°C, e.g., 1,000,000°C. In the first response, each Applicant respectfully submitted that the Examiner improperly equates postulated inoperability with non-enablement and failed to focus on the actual issue, namely, whether one of ordinary skill in the art would be able to practice the claimed invention without undue experimentation. The Examiner, in the Advisory action, did not address this issue. Nor was the issue removed on the cover sheet PTOL-303. The issue is addressed here.

In this Amendment, claim 15 has been amended to depend from claim 14, which recites *the reacted metal-containing precursor is product of combustion*. Claim 15 has been further amended to provide an antecedent (underlined) reading *combustion processing is performed at a temperature greater than 600°C.*

Even if the Examiner's postulated inoperability were right, a claim is still not unpatentable for lack of operability simply because the invention would not work perfectly under all conditions. Hildreth v. Mastoras, 257 U.S. 27, 34 (1921) ("The machine patented may be imperfect in its operation; but if it embodies the general principle and works ... it is enough."); Atlas Powder Co. v. E.I. du Pont De Nemours & Co., 750 F.2d 1569, 1576-77 (Fed. Cir. 1984) ("Even if some of the claimed combinations were inoperative, the claims are not necessarily invalid.") (cases will be made available upon request). Whether a

patented process is operable under postulated conditions differs from whether a particular claim is enabled by the specification.

In order to satisfy the enablement requirement of § 112, paragraph 1, the specification must enable one of ordinary skill in the art to practice the claimed invention without undue experimentation. A considerable amount of experimentation is permissible (i.e., not undue), if it is merely routine or if the specification in question provides a reasonable amount of guidance with respect to the direction in which the experimentation should proceed. M.P.E.P. § 2164.06. In this case, a reasonable amount of guidance about processing temperature exists in the present specification at paragraph 62:

> [0062] The high temperature processing is conducted at step 106 (Figure 3) at temperatures greater than 1500°C, preferably 2500°C, more preferably greater than 3000°C, and most preferably greater than 4000°C.

Of course, these temperatures exceed 600°C. Between the specification, the claims, and the knowledge of one of ordinary skill in the art, one of ordinary skill in the art would be able to practice the claimed invention at *a temperature greater than 600°C* without undue experimentation. Thus, the present rejection should be withdrawn.

2. General Enablement (critical element missing)

Claims 1, 4, 6, 11-20, 27, & 31-32 are rejected as failing to comply with the general enablement, because the temperature range (see, e.g., paragraph 62 above) is "critical or essential." Office action, para. 4 (reading Examiner's references to paragraph 88-89 as referring to paragraph 62, because paragraph 62 is consistent with the cited language reproduced in the body of the rejection). In the first response, Applicant submitted that the specification does not state the criticality of a particular temperature range, and pointed to paragraph 58:

> [0058] While the above examples specifically teach methods of preparing dispersed powders of oxides, carbides, nitrides, borides, and carbonitrides, the teachings may be readily extended in an analogous manner to other compositions such as chalcogenides. While it is preferred to use high temperature processing, a moderate temperature processing or a low/cryogenic temperature processing may also be employed to produce high purity nano-dispersed powders.

In the Advisory action, the Examiner disagreed, stating that the (1) temperature range "may be critical **or essential**"; (2) the term "moderate temperature," used in paragraph 58, is not clear; and (3) the "specification as a whole may be interpreted such that for oxides, carbides, nitrides, borides, and carbonitrides it is essential to use high temperature processing while for *other compositions* [including chalcogenides] a *moderate temperature* ..." will suffice. Advisory action, p. 2 (emphasis in original).

In this second response, each Applicant respectfully disagrees with each point (1)-(3). Concerning points (1)-(2), paragraph 58's plain meaning does not hint that a given temperature is essential. While paragraph 58 states that high temperature (defined in paragraph 62, quoted above, to include temperatures above 1500°C) is "preferred," paragraph 58 also states that moderate temperatures and low/cryogenic temperatures are sufficient for the present method. Even if the term *moderate temperature* were unclear, as urged by the Examiner, the term *moderate temperature* should be construed to include temperatures lower than those stated for high temperature, namely, above 1500°C. And along these lines, above, in addressing support for *a temperature greater than 600°C*, the Examiner was directed to the present specification, paragraph 60, which incorporates by reference U.S. Pat. No. 5,984,997. Likewise, the term *low/cryogenic temperatures*, recited in paragraph 58, should be construed to include temperatures lower than those stated for high temperature. In summary, the Examiner's points (1)-(2) are unsupported by the record.

Regarding point (3), the Examiner's reasoning for dividing the products into two groups, i.e., the first including products in which, in order to be made, it is essential to use high temperature processing ("oxides, carbides, nitrides, borides, and carbonitrides it is essential to use high temperature processing") and the second including products in which high temperature process is not essential ("while for *other compositions* [including chalcogenides] a *moderate temperature* . . ." will suffice.)-remains unclear. Paragraph 58 states, without qualification, that "[w]hile it is preferred to use high temperature processing, a moderate temperature processing or a low/cryogenic temperature processing may also be employed...." In summary, the Examiner's point (3) is unsupported by the record.

Because the Examiner's points (1)-(3) are unsupported by the record, the present rejection should be withdrawn.

D. 35 U.S.C. § 112, second paragraph-Indefiniteness

Claim 15 is rejected as lacking antecedent. Office action, para. 6 (reading Examiner's references to claim 16 as referring to paragraph 15, because that would make the passage make sense). The present version of claim 15 avoids the issue. Thus, the rejection should be withdrawn.

E. 35 U.S.C. § 102/103

The Examiner maintains five sets of rejections using one of several combinations of Bickmore (U.S. Pat. No. 5,984,997); Konig (U.S. Pat. No. 5,356,120), Holzl (U.S. Pat. No. 3,565,676), and Umeya (U.S. Pat. No. 5,489,449). Final Office action, paras. 9-13. Each set is traversed under a separate header.

1. Bickmore

Claims 1, 4, 6, 11-15, 17-20, & 31-32 are rejected as anticipated by Bickmore, or in the alternative obvious over Bickmore. Office action, para. 9. Consideration is also given to the Office action dated March 9, 2007, pages 7-9, paragraph 16. A reference cannot anticipate what it does not describe. Here, on one hand, claim 1 and its rejected dependent claims recite:

--wherein the powder manufactured comprises nano-dispersed nanopowders comprising carrier particles of at least one first composition and attached particles of at least one second composition that are dispersed on and attached to the surface of the carrier particles, wherein the attached particles differ from the carrier particles, wherein the ratio of the average size of the carrier particles to the average size of the attached particles is greater than or equal to 2--.

On the other hand, Bickmore does not. Take for example, Example 4, at col. 8, of Bickmore, which is reproduced below.

Example 4

Indium Tin Oxide

This example demonstrates the use of the invention to produce a complex nanopowder composition using a non-polar-in-polar emulsion.

50 g of indium shot was placed in 300 ml of glacial acetic acid and 10 ml of nitric acid. The combination, in a 1000 ml Erlenmeyer flask, was heated to reflux while stirring for 24 hours. At this point, 50 ml of HNO_3 was added, and the mixture was heated and stirred overnight. The solution so produced was clear, with all of the indium metal dissolved into the solution, and had a total final volume of 318 ml. An equal volume (318 mL) of 1-octanol was added to the solution along with 600 mL ethyl alcohol in a 1000 mL HDPE bottle, and the resulting mixture was vigorously shaken. 11.25 ml of tetrabutyltin was then stirred into the solution to produce a clear indium/tin emulsion. When the resulting emulsion was burned in air, it produced a brilliant violet flame. A yellow powder residue was collected from the flamed emulsion; scanning electron microscope photographs of this powder are shown in FIG. **4**.

X-ray diffraction of the collected powder showed that it contained In_2O_3 and SnO_2 phases. The X-ray diffraction spectrum for the powder is given in FIG. **5**. Line broadening analysis of this spectrum indicated that the powder comprised 30.9–38.3 nm In_2O_3 particles, and 39.3–42.6 SnO_2 particles. The mean grain size of the powder was about 37 nm and the standard deviation was about 6 nm.

Note that the In_2O_3 particles and the SnO_2 particles are almost the same size (In_2O_3 = 30.9-38.3 nm, and SnO_2 = 39.3-42.6 nm). At least because *the ratio of the average size of the* SnO_2 *particles to the average size of the* In_2O_3 *particles is* ***not*** *greater than or equal to 2*, the example's ITO falls outside the scope of the claims.

Along these lines, it is believed that the Examiner implicitly expressed concerns that agglomerated particles of a single phase inherently anticipate the claims embrace the claims. Along these lines, the Examiner's concerns are addressed by the following language: *wherein the attached particles differ from the carrier particles*. Although agglomerated products are not disclaimed *per se*, the claims do recite *wherein the powder manufactured comprises nano-dispersed nanopowders comprising carrier particles of at least one first composition and attached particles of at least one second composition that are dispersed on and attached to the surface of the carrier particles.*

Furthermore, silence cannot equal a reason to modify Bickmore, let alone a basis to predict the success that modification. Thus, the present rejection should be withdrawn.

2. Konig in view of Holzl

Claims 1, 4, 6, 11-15, 17-20, & 32 are rejected as obvious over Konig in view of Holzl. Office action, para. 10. It is believed that the combination fails to teach that--*the powder manufactured comprises nano-dispersed nanopowders comprising carrier particles of at least one first composition and attached particles of at least one second composition that are dispersed on and attached to the surface of the carrier particles, wherein the attached particles differ from the carrier particles, wherein the ratio of the average size of the carrier particles to the average size of the attached particles is greater than or equal to 2*--. Furthermore, silence cannot equal a reason to modify the combination, let alone a basis to predict the success of that combination. Thus, the present rejection should be withdrawn.

3. Bickmore in view of Umeya

Claims 16 & 27 are rejected as obvious over the teachings of Bickmore in view of Umeya. Office action, para. 11. It is believed that the combination fails to teach that-- *the powder manufactured comprises nano-dispersed nanopowders comprising carrier particles of at least one first composition and attached particles of at least one second composition that are dispersed on and attached to the surface of the carrier particles, wherein the attached particles differ from the carrier particles, wherein the ratio of the average size of the carrier particles to the average size of the attached particles is greater than or equal to 2*--. Furthermore, silence cannot equal a reason to modify the combination, let alone a basis to predict the success of that combination. Thus, the present rejection should be withdrawn.

4. Konig in view of Holzl further in view of Umeya

Claims 16 & 27 are rejected as obvious over the teachings of Konig in view of Holzl further in view of Umeya. Office action, para. 12. It is believed that the combination fails to teach that-- *the powder manufactured comprises nano-dispersed nanopowders comprising carrier particles of at least one first composition and attached particles of at least one*

second composition that are dispersed on and attached to the surface of the carrier particles, wherein the attached particles differ from the carrier particles, wherein the ratio of the average size of the carrier particles to the average size of the attached particles is greater than or equal to 2--. Furthermore, silence cannot equal a reason to modify the combination, let alone a basis to predict the success of that combination. Thus, the present rejection should be withdrawn.

5. Konig in view of Holzl further in view of Bickmore

Claim 31 is rejected as obvious over the teachings of Konig in view of Holzl further in view of Bickmore. Office action, para. 13. It is believed that the combination fails to teach that-- *the powder manufactured comprises nano-dispersed nanopowders comprising carrier particles of at least one first composition and attached particles of at least one second composition that are dispersed on and attached to the surface of the carrier particles, wherein the attached particles differ from the carrier particles, wherein the ratio of the average size of the carrier particles to the average size of the attached particles is greater than or equal to 2*--. Furthermore, silence cannot equal a reason to modify the combination, let alone a basis to predict the success of that combination. Thus, the present rejection should be withdrawn.

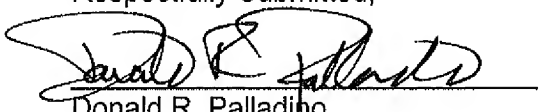
Conclusion

It is believed that the present application is in condition for allowance. Favorable reconsideration of the application is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

If a petition for an extension of time is required, then one is requested. The Director is hereby authorized to charge any fees or deficiencies in fees which may be required, or credit any overpayment to Deposit Account No. 16-2025.

Respectfully Submitted,



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